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Factors affecting the use of social software: TAM perspectives

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Abstract

Purpose – The purpose of this study is to explore the acceptance and use of social software tools; in particular, the paper focuses on how the features of social software determine its use.

Design/methodology/approach – This study identifies and uses three independent variables: intrinsic motivation, communication, and information/knowledge sharing. The dependent variables are based on the technology acceptance model (TAM) and include the perceived usefulness of social software and the perceived easiness of using social software. Using an online survey, data were collected from employees in government agencies ($n = 116$) in Korea.

Findings – The results of a regression analysis show that both communication and knowledge sharing have a positive effect on the perceived usefulness of social software. However, the results did not statistically support intrinsic motivation as a crucial factor influencing the usefulness of social software. The findings also indicated that intrinsic motivation and communication are crucial factors in the ease of use of social software, while knowledge sharing is not significant statistically.

Research limitations/implications – There are some limitations in this study that need to be addressed. First, in this study, the subjects in the questionnaire survey were employees in Korean government related agencies. In addition, the survey was conducted by volunteers responding to the questionnaire. Thus, in other circumstances, the findings of this study may not be valid or generalizable due to a different social context and representative sampling.

Originality/value – The study implies that decision makers in software companies should support knowledge sharing activities and a variety of communication channels to transform a government agency into a social software community. In addition, the study shows that social software developers should consider enjoyment as a crucial factor for ease of use. Finally, the study found that the associations between the features of social software and South Korean government employees' characteristics for adopting social software can serve as a starting point for research projects involving government employees in other countries.

Keywords Social software, Technology acceptance model, Intrinsic motivation, Communication channel, Knowledge sharing, Public sector organizations, South Korea

Paper type Research paper



Introduction

Advances in information technology are changing the way in which individuals communicate and interact. With this new technology, people can meet, connect, and co-work in virtual space. For example, Social Software helps users collaborate in virtual space, and it is even lifting geographical constraints and changing communication patterns. Web 2.0 technology affects the ways that people interact and share ideas (Marenzi *et al.*, 2008). As more advanced information technology improves significantly, practitioners and researchers are interested in learning why the

users either accept or resist using certain technologies (Ferdousi and Levy, 2010; Klaus *et al.*, 2007). This information may help researchers identify different ways to improve and support the users' acceptance of beneficial technologies.

The Technology Acceptance Model (TAM), which was developed by Davis and his colleagues (Davis *et al.*, 1989), is one of the most influential models used for understanding the usage intention and acceptance of new technology. TAM suggests that the users' decisions about how and when they will use the new technology are influenced by several factors including the users' perceptions and motivations (Davis *et al.*, 1992; Venkatesh, 2000; Venkatesh *et al.*, 2002). Some researchers have investigated intrinsic motivations such as perceived enjoyment to determine if these factors will influence the behavior of web technology users (Teo *et al.*, 1999; Venkatesh *et al.*, 2002). Agrifoglio *et al.* (2010) have investigated the process of the acceptance and use of technology; they focus on the role of intrinsic and extrinsic motivation.

In all organizations, the web technology trend depends on IT to execute a variety of operational, tactical, and strategic processes (Applegate *et al.*, 2003). Many organizations feel pressured to adopt new web technologies into their tactical and strategic processes (Saadé, 2007). Thus, the users' attitude toward technology acceptance is an important area for IS researchers (Lewis *et al.*, 2003). In fact, previous studies have investigated the factors of web technology that affect the acceptance of various technologies (Agrifoglio *et al.*, 2010; Hsu and Lin, 2008; Yuen and Ma, 2006). However, few studies have examined whether the essential features of Social Software are crucial factors that affect the acceptance of Social Software. Thus, this study focuses on investigating how the features of Social Software will influence the use of Social Software applications and services. Here, the essential features include three aspects: intrinsic motivation, communication channels, and knowledge sharing (Lee and McLoughlin, 2010). The results of the study are expected to be helpful in developing strategies to promote the use of Social Software and direct the appropriate use of developed applications.

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Background: social software and TAM

Our literature review focuses on two core elements of the study: social software and the Technology Acceptance Model (TAM).

Web 2.0 and social software

Web 2.0, which is also called the read/write web, includes technologies such as Blogs, Wikis, and social media sharing services such as YouTube and delicious. According to Tim O'Reilly who coined the term Web 2.0:

Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them (O'Reilly, 2006).

Social Software is another term for Web 2.0. The term was first coined in 2002, and it is defined simply as "software that supports group interaction" (Shirkey, 2003). Suter *et al.* (2005) offer a more detailed definition:

Social Software as a tool (for augmenting human social and collaborative abilities), as a medium (for facilitating social connection and information interchange), and as an ecology (for enabling a "system of people, practices, values, and technologies in a particular local environment").

In current situations, Social Software refers to new technology that enhances connections between individuals and groups. In other words, it allows people to interact and share information and knowledge. Examples of Social Software include social networking sites such as Twitter and Facebook; media sharing sites like Flickr and YouTube; and commercial sites such as Amazon.com. Most of these applications and services have features such as open APIs, service-oriented architecture, and the function to upload data and media. Boyd (2005) explains that Social Software has three key distinguishing features: support for conversational interaction between individuals or groups; support for social feedback, where groups rate the contributions of their members; and social networks between people (Boyd, 2005). More specifically, Boyd indicates that Social Software covers one or more (not necessarily all) of these elements:

- *Support for conversational interaction between individuals or groups*: discussions between individuals and groups include real time conversations like instant messaging, and “slow time” conversations that occur in collaborative virtual spaces.
- *Support for social feedback*: reputation and trust are crucial in online interactions; this is demonstrated by the importance placed by sites such as eBay, which tracks their sellers’ ratings and reputations.
- *Support for social networks*: many Social Software applications create a digital layout of a person’s social network and facilitate adding new connections (Boyd, 2005).

While Boyd allows that some people consider email or discussion lists to be Social Software, he makes an important distinction between traditional communication software and Social Software. He explains that traditional software places people into groups with a top-down approach; in other words, it assigns membership. However, Social Software takes a bottom-up approach, which enables people to organize themselves into a network based on their preferences. Therefore, with a bottom-up approach, people can sign up for a system and build communities using their personal preferences (Marenzi *et al.*, 2008). In contrast, traditional communication software uses a top-down approach where people are assigned into a specific organization or groups. Social Software is based on supporting individuals who interact socially with people who have similar interests (Marenzi *et al.*, 2008). In addition, users typically enjoy Social Software itself and work with various Social Software applications voluntarily. For example, the authors of social media enjoy content that they have created themselves, content that is copied from other media, and mash-ups that contain a mix of content that could possibly be from several authors (Ahonen and Lietsala, 2007).

The popularity of social technologies is attributed to the increase in low-cost tools and the critical mass of millions of people who are now connected to the Internet and to the people’s need to feel like part of a community (Avram, 2006). These users tend to rely more on their own personal social networks than on traditional business structures. Vinson (2005) describes additional features of Social Software tools: they allow people to easily participate (by both contributing and reading) in the activities; they provide the opportunity for networking and allow for the self-forming of networks since people are usually both consumers and producers; and each individual can be a member on several networks simultaneously (Avram, 2006).

The major areas of Social Software include blogs, wikis, and the social network services. Social Software provides various tools; some tools are focused more on the connection between people, while others are designed to allow users to share different types of information or work together on one project. A Social Software is difficult to fit into a strict classification, because Social Software includes many different tools that tend to intertwine and to rely on each other (Avram, 2006).

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The Technology Acceptance Model (TAM)

According to the Technology Acceptance Model (TAM), the users' behavior of using technology is determined by their behavioral intention, which is influenced by their perceived ease of use and usefulness of the technology. Perceived ease of use is the extent to which a user believes that using the technology will be free of effort, and perceived usefulness is the extent to which a person believes that using the technology will enhance his or her job performance (Davis, 1989). Research supports that theory that perceived ease of use is a determinant of perceived usefulness; research shows that users tend to perceive a technology will be useful when it is effort-free (Davis, 1989, 1993; Davis *et al.*, 1989; Venkatesh and Davis, 1996; Venkatesh and Davis, 2000). However, in their study, Agarwal and Karahanna (2000) have found that ease of use does not have a significant effect on usefulness.

Several previous studies proposed that enjoyment, which is the degree to which the technology is perceived to be personally enjoyable, will also affect the users' behavioral intention (Davis *et al.*, 1992; Venkatesh *et al.*, 2002) and the users' perceived ease of use (Venkatesh, 2000; Venkatesh *et al.*, 2002). Here, enjoyment is a type of intrinsic motivation since it leads a person to use technology for no apparent reinforcement other than the process of using it. Perceived usefulness, on the other hand, is a type of extrinsic motivation because it leads a person to use technology since it is perceived to be useful in achieving valued outcomes (Davis *et al.*, 1992; Venkatesh and Speier, 2000). Research shows that enjoyment (intrinsic motivation) has no direct effect on behavioral intention, but it does influence the ease of use (Venkatesh *et al.*, 2002). Enjoyment seems to influence usefulness via ease of use (Venkatesh, 2000).

Research model and hypotheses

The purpose of this study is to explore how users accept and use Social Software tools; in particular, we focus on the features of Social Software in determining the use of Social Software. As previously described, Social Software is based on supporting the users' enjoyment, communication channel, and data and information sharing. Therefore, we believe that the users of Social Software will tend to easily adopt new technology. Thus, these major characteristics of Social Software were selected and examined as factors in adopting Social Software applications. These factors include the users' intrinsic motivation, communication, and knowledge sharing behaviors. The research model is presented in Figure 1.

In addition, the factors investigated in this study are listed, along with their operational definitions and related studies, in Table I.

Based on the research model, eight hypotheses have been developed and tested in the study.

Intrinsic motivation

Some researchers have examined the key role of the users' intrinsic motivation in determining their use of technology. Davis *et al.* (1992) describes intrinsic motivation as the extent to which a person enjoys using the computer. Venkatesh (2000) also examines the role of intrinsic motivation in determining technology acceptance; he identifies intrinsic motivation as an important factor used in explaining the perceived ease of use.

With Social Software such as blog and YouTube, people voluntarily create their own material for pleasure without enforcement. Thus, the authors of this study have selected intrinsic motivation as an external factor affecting the use of Social Software. In this study, internal motivation is defined as the extent to which the activity of using Social Software is perceived to be enjoyable and pleasant. Thus, we propose the following hypotheses:

H1a. Intrinsic motivation has a positive effect on the perceived usefulness of Social Software.

H1b. Intrinsic motivation has a positive effect on the perceived ease of use of Social Software.

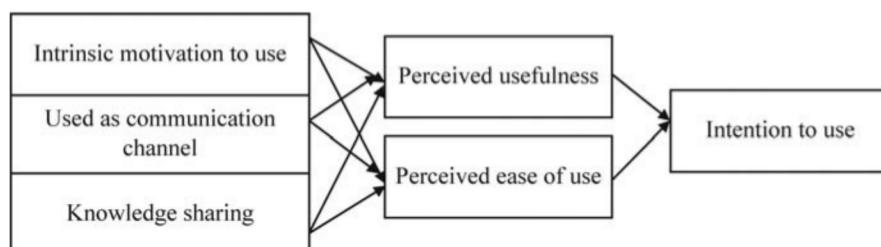


Figure 1.
Research model

Variables	Operational definition	References
Intrinsic motivation	The extent to which the activity of using Social Software is perceived to be enjoyable and playful	Davis <i>et al.</i> (1992) Webster and Martocchio (1992)
Communication channel based IT	Degree to support of communication channels based on Social Software for gaining and exchanging ideas	Kim and Ju (2008)
Information/knowledge sharing	Degree to willingness to share information/knowledge	Kim and Ju (2008)
Perceived usefulness	The degree to which the user believes the Social Software would enhance job performance and social life	Davis (1989) Venkatesh and Davis (2000)
Perceived ease of use	The user's belief that using the Social Software would require minimum effort	Davis (1989) Venkatesh and Davis (2000)
Intention to use	A positive attitude and usage toward the Social Software applications	Davis (1989) Venkatesh and Davis (2000)

Table I.
Operational definition of variables

Communication channel

Social Software can be defined as software that supports group communication (Shirkey, 2003). As mentioned in the previous section, one of the key features of Social Software is the ability to support conversational interaction between individuals and groups. To be more specific, the main purpose of social networking is to keep in touch with friends. Social networking may be convenient for retaining contact when time and distance are an issue (Coyle and Vaughn, 2008).

Various communication tools have played important roles in social networks (Licoppe and Smoreda, 2005; Thrift, 2004). Some researchers suggest that online communication tools facilitate “social-ties” and that offline social networks are affected by communication technology (Coyle and Vaughn, 2008). Thus, Social Software tools are likely to support the communication interaction through email and blogs, as well as social networking sites. Employees may use multiple channels to support both their social- and work-related communication. For example, the employees may use private messaging for individual contact, email for intra-organizational communication, and social networking services as well (Haythornthwaite, 2001). In this study, we examine the communication channels as an external factor. Thus, we propose that the use of communication channels based on IT for gaining and exchanging information and knowledge is strongly associated with the intention to use Social Software. Thus, we propose the following hypotheses:

- H2a.* The use of communication channels based on IT has a positive effect on the perceived usefulness of Social Software.
- H2b.* The use of communication channels based on IT has a positive effect on the perceived ease of use of Social Software.

Information/knowledge sharing

Social Software applications include the ability to share information with others. Weblogs, wikis, and other social networking services have essential features to allow their users to share knowledge and information, and RSS feeds have made sharing even easier (Avram, 2006). The people who frequently share and exchange the information and knowledge are more likely to use Social Software. Yuen and Ma (2004) explore the relationship between technology acceptance and participation in knowledge sharing; they found inter-correlations among knowledge sharing and technology acceptance. Thus, the level of knowledge sharing among employees can be a significant factor in their intention to use Social Software. In this study, knowledge sharing is defined as the extent to which employees share information and knowledge with other employees in the organization (Kim and Ju, 2008). The hypotheses are as follows:

- H3a.* The degree of knowledge sharing among employees is positively associated with the perceived usefulness of Social Software.
- H3b.* The degree of knowledge sharing among employees is positively associated with the perceived ease of use in adopting and utilizing Social Software.

Perceived usefulness and perceived ease of use

In TAM, the users' acceptance of new technology is influenced by two major variables:

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- (1) perceived usefulness (PU); and
 - (2) perceived ease of use (PEOU) (Davis, 1989, 1993).

Perceived usefulness (PU) refers to the degree to which the users believe that the new technology will enhance their job performance (Davis, 1989, 1993; Davis *et al.*, 1989). Perceived ease of use (PEU) refers to the users' beliefs that using the new technology will require little effort (Davis, 1989, 1993; Davis *et al.*, 1989). TAM suggests that the users' intentions to use new technology are jointly determined by their attitudes toward using and perceived usefulness (Davis, 1989, 1993; Davis *et al.*, 1989) as shown in Figure 1:

- H4.* The degree of perceived usefulness of Social Software use has an effect on the employee's intention to use Social Software (TAM).
- H5.* The degree of perceived ease of Social Software use has a positive effect on the employee's intention to use Social Software (TAM).

Data collection and analysis

Data collection

Using a web-based survey method, data were collected from August-October 2009. The questionnaire consisted of questions about the participants' demographic backgrounds; it also asked about their motivation, perceptions, and intentions related to the use of Social Software. A call for participation was e-mailed to 200 employees based on a convenience sample in six government research agencies in Korea, and 124 people responded (64 percent response rate). Eight of the returned questionnaires were incomplete and discarded, which resulted in a total of 116 usable questionnaires. A total of 116 government employees in South Korea participated in the study. For the research, we sought organizations that had established IT infrastructures so we could explore the acceptance and use of Social Software tools. The employee size was between 50 and 80.

There are some limitations in this study that need to be addressed. First, in this study, the subjects in the questionnaire survey were employees of Korean government related agencies. In addition, the survey was conducted by volunteers who responded to the questionnaire. There is potential sampling bias because the study was based on neither a random nor a representative sample. Thus, in other circumstances, the findings of this study may not be valid or generalizable due to a different social context or a different sampling representation. Second, authors have analyzed data using a regression analysis and did not apply a path analysis because we focused on the effect of external variables such as intrinsic motivation, communication channels, and knowledge sharing on the usefulness and ease of use for adopting Social Software

Findings

Table II shows the demographic characteristics of this study sample. For the gender distribution, 58.6 percent of the respondents ($n = 68$) were female, and 41.4 percent ($n = 48$) were male. In terms of age, most of the participants (88.8 percent) were in their twenties or thirties. In fact, 41.4 percent (48 out of 116) were in their twenties, 47.4 percent (55) were in their thirties, and 11.2 percent (13) were in their forties. For their education level, 3.4 percent (4 out of 116) were graduates of two-year colleges, 47.4

Table II.
Demographic
characteristics of
participants

Classification		Number	Percentage (%)
Age	20-29	48	41.4
Age	30-39	55	47.4
Age	40-49	13	11.2
Education	Two years college	4	3.4
Education	Four years college	55	47.4
Education	Graduate school	57	49.1
Job position	Planning	12	10.3
Job position	Human Resources	10	8.6
Job position	Research and Development	42	36.2
Job position	Technology	6	5.2
Job position	Service	25	21.6
Job position	Others	21	18.1
Work experience	Less than one year	22	19.0
Work experience	One-to-three years	24	20.7
Work experience	Three-to-five years	28	24.1
Work experience	Five-to-ten years	29	25.0
Work experience	More than ten	13	11.2

Note: n = 116

percent (55) were graduates of four-year colleges, and 49.1 percent (57) were alumnae of graduate schools. For job position coverage, 10.3 percent of the participants were employees from the Planning Department (12), 8.6 percent (10) were from Human Resources, 36.2 percent (42) were from the Research and Development department, 5.2 percent (6) were from technology, 21.6 (25), and 18.1 percent (21) were from others. For work experience, 19.0 percent (22 out of 116) had been employed for less than one year, 20.7 percent (24) from one-to-three years, 24.1 percent (28) from three-to-five years, 25.0 percent (29) from five-to-ten years, and 11.2 percent (13) had been employed for over ten years.

Reliabilities and correlations

To test the hypotheses developed in this study, we assessed numerous factors: a correlation coefficient and all of the measures appeared to be relatively distinct; the highest correlation between the communication channel and knowledge sharing was 0.669. The correlation between usefulness and knowledge sharing was 0.639 and was relatively high. In addition, the coefficient between intrinsic motivation and usefulness was 0.384, which was the lowest measurement. To ensure internal consistency, researchers computed Cronbach's α . Cronbach's α is used to measure how well a set of variables used in an instrument can measure a one-dimensional construct through a coefficient reliability. Table III presents the analysis of the internal consistency of the independent variables and the dependent variable in terms of Cronbach's α . Again, the independent variables are the intrinsic motivation, communication channel, and knowledge sharing. The dependent variable includes the intention of use. Perceived usefulness and Perceived ease of use in this study were used as mediate variables. Table III shows the reliability and correlation among the factors. Ease of use (0.787) and intention of use (0.782) were slightly lower than the other relational factors. Thus, the test items are reliable in terms of internal consistency.

Variables	Mean	s.d.	Intrinsic_motivation	Communication	Knowledge_sharing	Usefulness	Ease of use	Intention of use
Intrinsic motivation	3.4526	0.77734	1	(0.812)	(0.806)			
Communication	3.2586	0.78769	0.539 **	1	1	(0.863)		
Knowledge_sharing	3.0862	89023	0.408 **	0.669 **	1			
Usefulness	3.3707	0.84187	0.384 **	0.572 **	0.639 **	(0.884)		
Ease of use	3.5216	0.76156	0.637 **	0.587 **	0.495 **	1		
Intention of use	3.7974	0.79120	0.490 **	0.438 **	0.459 **	0.619 **	0.523 **	(0.787)
						0.619 **	1	1
								(0.782)

Notes: * $p < .05$; ** $p < 0.01$; *** $p < 0.001$; () Cronbach's α

Table III.
Reliability and correlations

Regression analysis

For this study, we selected and examined factors that affect the intention to use technologies. The independent variables include intrinsic motivation, communication channel, and knowledge sharing while the dependent variable is the use intention of Social Software. Also, usefulness of Social Software and perceived ease of use were explored as mediate variables. To investigate the relationship among them, eight hypotheses were developed and tested using regression analyses.

Perceived usefulness of social software. Table IV shows the results of our multiple regression analysis, which shows the cause and effect between three independent variables and the usefulness of Social Software (a mediate variable). The adjusted R square (R^2), which is the portion of variance between the three factors and the usefulness of Social Software, is 0.438; this indicates that 43.8 percent of the usefulness of Social Software is explained by the three factors ($F = 30.913, p < 0.001$). As a result of the multiple regression analysis, we have found that communication ($\beta = 0.210, p < 0.05$) and knowledge sharing ($\beta = 0.448, p < 0.01$) significantly affect the usefulness of Social Software. $H2a$ and $H3a$ are accepted, but $H1a$ (intrinsic motivation) is rejected. The value of β , which is the standardized regression coefficient, of the two above mentioned significantly affecting factors shows that knowledge sharing has a relatively stronger influence on the usefulness of Social Software than the communication channel.

Perceived ease of use of social software. Table V presents the results of our multiple regression analysis that examines the relationship between three independent variables and the ease of use of Social Software as a mediate variable. The adjusted R

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Independent variables	Non-standardized coefficient		Standardized coefficients Beta
	Beta	s.d.	
(Constant)	0.940	0.292	
Intrinsic motivation	0.113	0.097	0.103
Communication	0.225	0.111*	0.210
Knowledge sharing	0.425	0.090**	0.448

Notes: *, ** indicates significance at the 95 percent and 99 percent level, respectively; $R^2 = 0.453$; Adjusted $R^2 = 0.438$; $F = 30.93 (p < 0.001)$

Table IV.
Results of hypotheses testing: usefulness of social software

Independent variables	Non-standardized coefficients		Standardized coefficients Beta
	Beta	s.d.	
(Constant)	0.893	0.252	
Intrinsic motivation	0.466	0.083**	0.472
Communication	0.216	0.096*	0.226
Knowledge_sharing	0.098	0.077	0.114

Notes: *, ** indicates significance at the 95 percent and 99 percent level, respectively; $R^2 = 0.503$; Adjusted $R^2 = 0.490$; $F = 37.805 (p < 0.001)$

Table V.
Results of hypotheses testing: ease of use of social software

square (R^2), which is the portion of variance between three factors and the usefulness of Social Software, is 0.49; this indicates that 49.0 percent of the ease of use is explained by the three independent variables ($F = 37.805, p < 0.001$). The results show how the intrinsic motivation ($\beta = 0.472, p < 0.001$) and communication ($\beta = 0.226, p < 0.05$) significantly affect the ease of use. $H1b$ and $H2b$ are accepted, but $H3b$ (knowledge sharing) is rejected. The value of β , which is the standardized regression coefficient, of the two above mentioned significant factors shows that intrinsic motivation has a relatively stronger influence on the ease of use of Social Software than the communication channel.

Intention of use of social software. Table VI shows the results of the multiple regression analysis that examines the relationship between the two mediate variables (usefulness and ease of use) and the use intention of Social Software as a dependent variable. The two mediate variables are considered to be the independent variables that analyze the effects on the use intention of Social Software. Thus, the independent variables are the usefulness of Social Software and the perceived ease of use of Social Software; on the other hand, the dependent variable is the perceived use intention of Social Software. The adjusted R square (R^2), which is the portion of variance between two factors and the use intention of Social Software, was 0.415; this indicates that 41.5 percent of the use intention of Social Software was explained by the two independent variables ($F = 41.756, p < 0.001$). As shown by the results of the multiple regression analysis, the usefulness of Social Software ($\beta = 0.474, p < 0.001$) and ease of use of Social Software ($\beta = 0.251, p < 0.05$) significantly affect the users' use intention of Social Software. Thus, $H3a$ and $H3b$ are accepted. The value of β , which is the standardized regression coefficient, of the two above mentioned significantly affecting factors shows that the usefulness of Social Software has a relatively stronger influence on the use intention of Social Software than ease of use of Social Software. Thus, $H4$ (which is the hypothesis about the usefulness of Social Software on the necessity of Social Software) and $H5$ (which is the hypothesis about the ease of use of Social Software) are favored by rejecting the Null hypothesis at a statistically significant level ($p < 0.05$ and $p < 0.10$).

Thus far, the influencing factors on the use intension of Social Software among employees in the Korean government agencies have been identified and explored. To analyze the characteristics of the Social Software applications that influence the use intention of Social Software, we had to develop and test eight hypotheses that are related to each identified factor. The results of the testing hypotheses are summarized in Table VII.

Table VI.
Results of hypotheses testing: use intention of social software

Independent variables	Non-standardized coefficients		Standardized coefficients Beta
	Beta	s.d.	
(Constant)	1.37	0.283	
Usefulness	0.446	0.082**	0.474
Ease of use	0.261	0.090*	0.251

Notes: * , ** indicates significance at the 95 percent and 99 percent level, respectively; $R^2 = 0.425$; Adjusted $R^2 = 0.415$ $F = 41.756 (p < 0.001)$

Hypotheses	Results of hypotheses test	Factors affecting the use of social software
<i>H1a</i> Intrinsic motivation has a positive effect on the perceived usefulness of Social Software	Reject	
<i>H2a</i> Communication channel has a positive effect on the perceived usefulness of Social Software	Accept	
<i>H3a</i> The level of employee knowledge and information sharing is positively associated with the perceived usefulness of Social Software	Accept	
<i>H1b</i> Intrinsic motivation has a positive effect on the perceived ease of use of Social Software	Accept	
<i>H2b</i> Communication channel has a positive effect on the perceived ease of use of social software	Accept	
<i>H3b</i> The level of employee knowledge and information sharing is positively associated with the perceived ease of use of Social Software	Reject	
<i>H4</i> The degree of perceived usefulness of Social Software use has a positive effect on an employee's use intention of Social Software (TAM)	Accept	
<i>H5</i> The degree of perceived ease of Social Software use has a positive effect on an employee's use intention of Social Software (TAM)	Accept	

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Table VII.
Results of hypotheses testing

Discussion

Intrinsic motivation

In this study, intrinsic motivation is defined as the extent to which the activity of using Social Software is perceived to be enjoyable and pleasant. Intrinsic motivation is identified as one of the crucial factors to adopt new technology (Lee *et al.*, 2005; Saadé, and Bahli, 2005). In the TAM research, some scholars have found that perceived usefulness influences the users' intentions to use technology (Davis, 1989; Davis *et al.*, 1992; Venkatesh, 2000). In this study, however, our hypothesis about intrinsic motivation on the usefulness of Social Software was not statistically supported as a crucial factor; however, we did find that intrinsic motivation has a positive effect on the perceived use ease of Social Software. Thus, intrinsic motivation does not have a positive influence on the usefulness of Social Software, but it does have a positive effect on the users' perceived ease of use of Social Software. The results imply that participants simply enjoy the Social Software itself, even though they do not perceive it to be useful. In fact, Hsu and Lin (2008) have found that ease of use and enjoyment appear to be important variables in the context of blogs, but the perceived usefulness has no effect on the use of the blog. Moon and Kim (2001) also argue that perceived usefulness plays a significant factor only in work-related environments. In fact, the findings of our study are in line with these studies. Since Social Software applications allow users to create, communicate, and share information and knowledge voluntarily with enjoyment, then intrinsic motivation such as enjoyment is less likely to influence usefulness (which is more of a job performance related measure). Thus, this issue will need further exploration in the future.

Communication channel

In this study, the communication channel is identified as one of the external variables that influences the usefulness and ease of use of the Social Software. As a result of

hypothesis testing, the communication channel has been found to be statistically supported as a crucial variable on both the usefulness and ease of use of the Social Software. In other words, the support of a communication channel directly influences both the usefulness and ease of use of the Social Software. However, the level of impact on perceived usefulness is less than the level of impact of knowledge sharing on perceived usefulness (which is discussed in the next section). It seems that the communication channel could be a key role in adopting the Social Software. That is, the support of communication channel will probably help users perform better and to use the Social Software more easily.

Web 2.0 tools provide different types of communication: one-to-one, one-to-many, or many-to-many, and synchronous and asynchronous. These tools can be used to retrieve, share, and create multimedia such as the following: text (blogs and wikis), and images (Flickr, audio, podcasting and video in YouTube) (Marenzi *et al.*, 2008). Thus, this study implies that various communication channels support users as they adopt the Social Software positively. In addition, many Social Software products currently provide a presence function that displays the users' levels of availability. For example, with real time collaboration or communication tools, the users' presence may appear in several ways, including "online," "off-line," or "away." Thus, these real time communication tools make the software more useful and make it even easier to connect the people who collaborate to achieve the organization's common goals.

Knowledge sharing

Several researchers have examined the relationship between knowledge sharing and technology acceptance, and they have found a relationship between knowledge sharing and the TAM model. For example, Bock and Kim (2002) note that expected associations and contribution are the major factors of an individual's attitude toward knowledge sharing. In this instance, "expected association" means that employees believe they could improve their relationship to other employees by offering their knowledge, and "expected contribution" means that employees believe they could make contributions to the organization's performance. (Yuen and Ma, 2004). According to the study, the expected positive attitude toward knowledge sharing is found to have a positive intention to share knowledge. In our study, our findings show that knowledge sharing is the most significant factor affecting usefulness, however, it is not statistically supported as a crucial factor in determining the ease of use of Social Software. Thus, the Social Software applications must provide interactive tools or communication tools to help users to enhance connectivity and to manage knowledge. In addition, Social Software applications, including social bookmarking and RSS feeds, help users filter and manage information and knowledge. The use of these services has provided a way to share knowledge and ideas (Marenzi *et al.*, 2008).

Conclusions

Social Software refers to systems that allow users to interact and share data, and Social Software is gaining popularity as the size of online communities grows rapidly (Boyd, 2005). People have a natural tendency to rely on social networks for information collection (Nardi, 2005) and to fulfill their desire for social belonging and membership (Avram, 2006); these factors also contribute to the popularity of such software. While Social Software can foster efficient communication and

knowledge sharing, some users might resist using it as they find it too time-consuming or difficult to understand.

This study investigates how the various characteristics of Social Software will affect the users' acceptance of the Social Software itself. In particular, we identified and used three independent variables: intrinsic motivation, communication, and information/knowledge sharing. The dependent variables based on the technology acceptance model (TAM) include perceived usefulness of Social Software and perceived easiness of using Social Software. We used an online survey to collect data from employees in government agencies ($n = 116$) in Korea. Then we used a correlation and multiple regression analyses to analyze the data. A significant correlation was found among the independent and dependent variables. The results of the regression analysis show that communication and knowledge sharing have a positive effect on the perceived usefulness of Social Software. However, intrinsic motivation as a crucial factor influencing the usefulness of Social Software was not statistically supported in this study. The findings also indicate that intrinsic motivation and communication are the crucial factors in the ease of use of Social Software; however, knowledge sharing is not significant statistically. To transform a government agency into a Social Software community, decision makers in software companies should support knowledge sharing activities and a variety of communication channels. In addition, Social Software developers should consider enjoyment as a crucial factor for ease of use. This study found that the associations between the features of Social Software and the South Korean government employee's characteristics for adopting the Social Software can serve as a starting point for research projects involving government employees in other countries.

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